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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/722,168

11/22/2000

Clifford Brown

21-006

3876

22898

7590

01/10/2006

THE LAW OFFICES OF MIKIO ISHIMARU
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EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/722,168

Applicant(s)

BROWN ET AL.

Examiner

Kevin Y. Kim

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2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14,15,17-19,29,33-54,56-63,70,73-81,83-85 and 90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-14,29,33-54,56-62,70,73-80 and 90 is/are allowed.
- 6) ☒ Claim(s) 15,63,81 and 85 is/are rejected.
- 7) ☒ Claim(s) 17-19,83 and 84 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. Claims 15 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al (US 5,602,601 previously cited).

Kim et al describes “a device for detecting impairments in a digital quadrature amplitude modulated signal. See Fig.7 and last line in Abstract. The device comprises “a phase noise detector” (50) including a sorter (40), a rotator (42) coupled to the sorter and a comparator (50) coupled to the rotator.

Claim Rejections - 35 USC § 103

3. Claim 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 5,602,601 previously cited) in view of Pottinger et al (US 4,918,708 previously cited) and Gatherer (US 6,560,294 previously cited).

Kim et al describes “a device for detecting impairments in a digital quadrature amplitude modulated signal. See Fig.7 and last line in Abstract. The device comprises “a phase noise detector” (50) including a sorter (40), a rotator (42) coupled to the sorter and a comparator (50) coupled to the rotator.

Kim et al fails to disclose “a compression detector” and “an interference detector” that are also coupled to the constellation storage. Pottinger et al discloses a QAM impairment detector including compression and interference. See col.4, lines 48-58. Thus, it would have been obvious to one skilled in the art at the time the invention was made to further add “a

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compression detector” and “an interference detector” to the phase error detector of Kim et al for the purpose of compensating all the signal impairments, as suggested by Pottinger et al.

Furthermore, Gatherer teaches an implementation of a phase detector with a program executed by a digital processor, which is known as allowing flexibility in design such as modification and adaptation because of programmability. See col. 15, lines 3-5. Thus, it would have been obvious to store program instructions for the impairments detection in a memory for software implementation as taught by Gatherer.

4. Claim 85 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 5,602,601 previously cited) in view of Gatherer (US 6,560,294 previously cited).

Kim et al describes “a device for detecting impairments in a digital quadrature amplitude modulated signal. See Fig.7 and last line in Abstract. The device comprises “a phase noise detector” (50) including a sorter (40), a rotator (42) coupled to the sorter and a comparator (50) coupled to the rotator.

Kim et al fails to teach a “memory for storing program instructions” for the phase noise detector. Gatherer teaches an implementation of a phase detector with a program executed by a digital processor, which is known as allowing flexibility in design such as modification and adaptation because of programmability. See col. 15, lines 3-5. Thus, it would have been obvious to store program instructions for the impairments detection in a memory for software implementation as taught by Gatherer.

Allowable Subject Matter

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5. Claims 1,3-14, 29,33-54, 56-62, 70,73-80, 90 are allowed.
6. Claims 17-19, 83, 84 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KEVIN KIM
PATENT EXAMINER

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